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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/784,171 | 02/16/2001 | Norio Kimura | 2001-0163A | 1530 |

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EXAMINER

ROSE, ROBERT A

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

3723

DATE MAILED: 02/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/784,171

Applicant(s)
Kimura et al

Examiner
Robert Rose

Art Unit
3723



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Oct 31, 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4, 5, and 7-21 is/are pending in the application.
- 4a) Of the above, claim(s) 16-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 5, and 7-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 12 6) ☐ Other:

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DETAILED ACTION

1. Receipt is acknowledged of Applicant's Prior Art Statement, filed October 31, 2003.
2. Claims 3, and 6 have been canceled.
3. Newly submitted claims 16-21 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the process can be performed by another materially different apparatus, such as one having no top ring.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 16-21 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2, 4-5, and 7-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al(US 5672091) in view of Stephan(Australian No. 245213) and further in view of

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Kanzawa et al. Takahashi et al discloses an optical endpoint detection device for a cmp machine comprising an optical measuring device located adjacent an outer edge of the polishing pad to detect the surface of an overhanging wafer. Note optical endpoint detection device (3)(4) adjacent polishing table(1) for detecting the state of the wafer(F) held by top ring(2), without removal of the wafer from the table. While the polishing table lacks a notch in it's outer surface to allow light to pass through for observation of the work, such structure is known in the optical detection art as evidenced by Stephan. To provide one or more such notches in the outer periphery of the polishing table in Takahashi et al to locate the optical endpoint detection device as close as possible to the polishing table to save space, while still allowing detection of the state of the workpiece without removal of the workpiece would have been obvious in view of Stephan. With regard to claim 4 the exposure area of the wafer during measuring is deemed to constitute no more than an obvious matter of design choice in the absence of a showing of criticality in the use of "not more than 40%" exposure. Kanzawa et al disclose a polishing device for polishing wafers comprising a top ring which is oscillated across the pad in a swinging motion. To mount the top ring on a swingable arm to oscillate the wafer during polishing to provide a more even polishing action in Takahashi et al would have been obvious in view of Kanzawa et al.

6. Applicant's arguments filed October 31, 2003 have been fully considered but they are not persuasive. Takahashi et al hang the wafer over the edge of the pad to expose a portion of it's surface to allow optical measurement of it's surface by reflected light to determine the polishing endpoint. While a notch is not disclosed for this purpose, Stephan teaches such a notch in a

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rotary polishing tool for optical assessment of the state of the work. To provide one or more such notches in the polishing table of Takahashi et al for this reason would have been obvious in view of Stephan. Applicant's limitation of the top ring being swingable between an inner and outer area of the polishing table is taught by Kanzawa et al.

7. Any inquiry concerning this communication should be directed to Robert Rose at telephone number (703) 308-1360.

rr

February 4, 2004.

ROBERT A. ROSE
PRIMARY EXAMINER
ART UNIT 323

A handwritten signature in black ink, appearing to read 'R. Rose', is written over the printed name and title.